

MEDICAL BREAKTHROUGHS **RESEARCH SUMMARY**

TOPIC: AUGMENTED REALITY IMPROVES SPINE SURGERY WITH iSIGHT
REPORT: MB #4872

BACKGROUND: Virtual reality is the art and science of creating a virtual environment that provides a standardized, safe and flexible platform. Using virtual reality can allow for the assessment of various regions of the body for examination, diagnosis, planning and for the surgical training. In order to be able to use virtual reality for this purpose the user of this technology should be exposed to a realistic multidimensional visual stimulus which will allow the full integration of coherent, motor and mental functions of the operator. Based on the level of presence experienced by a user, virtual reality technology can be used for both immersive virtual reality and non-immersive virtual reality which offers the potential of combining the two for such things as integrating computer images on the real environment using semi-transparent glass.

(Source: <https://bmcoralhealth.biomedcentral.com/articles/10.1186/s12903-019-0937-8>)

DIAGNOSING: Using virtual reality in healthcare practices can be used to help with medical treatments by giving doctors the ability to view the inside of the human body virtually and allowing patients to see a virtual representation of their surgical plan by showing them a 360° VR reconstruction of their anatomy & pathology. Virtual reality in health care can also be used to help manage pain and physical treatments. Virtual reality for physical therapy has been shown to be effective in speeding up recovery time because giving patients the option to do their prescribed daily exercises in a virtual environment can make the activity more fun and as a result can keep the patient focused.

(Source: <https://visualise.com/virtual-reality/virtual-reality-healthcare/>)

NEW TECHNOLOGY: The possibility of medical VR could allow clinical researchers and real-life medical practitioners. Although the field is relatively new, there are increasing examples of VR having a positive effect on patients' lives and physicians' work. The first VR surgery was conducted in 2016 which was available for real time viewing. Medical VR uses include being able to train aspiring surgeons and for surgeons to practice operations.

(Source: <https://medicalfuturist.com/5-ways-medical-vr-is-changing-healthcare/>)

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If this story or any other Ivanhoe story has impacted your life or prompted you or someone you know to seek or change treatments, please let us know by contacting Marjorie Bekaert Thomas at mthomas@ivanhoe.com